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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/672,316

Filing Date: September 26, 2003

Appellant(s): KUMAR VENKATACHALAM, HARI HARA

Alan G. Rego
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed January 4, 2008 appealing from the Office action mailed August 6, 2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,320,559	YASUKAWA et al.	11-2001
6,307,526	MANN	10-2001
6,094,283	PRESTON	7-2000

5,656,804	BARKAN et al.	8-1997
5,497,170	KATO et al.	5-1996
5,281,957	SCHOOLMAN	1-1994

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 5-6, 8-13, 15-16 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yasukawa et al. (U.S Patent No 6,320,559), hereinafter Yasukawa in view of Schoolman (U.S Patent No. 5,281,957) and further in view of Mann (U.S Patent No. 6,307,526)

In reference to claims 1, Yasukawa discloses in Figs 1-2 a pair of data-specs (display 2 has spectacles like frame 101), comprising:

a pair of spectacles (display 2 has a spectacles like frame 101) adapted to be worn on the face of a person (operator 1); and

a projection unit (display panel 102 and enlarging lens 120 of display 2) coupled to the spectacles (display 2 has a spectacles like frame 101), the projection unit adapted to display data received from an information source (3) only as the front projected data in front of, and outside, the projection unit as shown in Figs. 20 and 21 [the computer 3 is disposed under the desk 7 to transmit information source to the display device 2; col. 10, lines 63- col. 11, lines 1-3].

Yasukawa also discloses the projection unit is structural and functionally application independent (col. 14, lines 64-66; col. 15, lines 62-65; col.23, lines 39-64; Figures. 1,8, 12; 15 31, 32, 35, 38, 39, 42 show the unit is structural and functionally application independent).

Yasukawa does not disclose the pair of spectacles having a first and a second lenses which are independent of the projection unit.

Schoolman discloses a projection unit (Fig. 7-9) for a portable computer having first and second lenses 65 and 66 which are independent from the projection unit as claimed.

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide the lenses 65 and 66 in the system of Yasukawa as taught by Schoolman to provide users plain lenses or vision corrected lenses as desired (col. 6, lines 45-50).

The combination of Yasukawa and Schoolman does not disclose the information source is a television set, and wherein the projection unit is adapted to display data from the television set.

Mann discloses a pair of spectacles (eye-glasses 100) having a projection unit (105) adapted to display data from a television set 160 (television 160 in Fig. 1 contains television tuner; col. 12, lines 55-60).

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide the television set as the display of the combination of Yasukawa and Schoolman as taught by Mann because it would provide users a combined display system not only capable of displaying data from computer for working but also providing video program from the television for entertaining.

In reference to claim 11, Yasukawa does not disclose the projection unit is configured to possess a resolution of at least 640 X 480 pixels.

Mann discloses the display screen of the projection unit possesses a resolution 640 x 480 pixels (col. 14, lines 28-32).

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide the display screen having 640 x 480 pixels in the combination of Yasukawa and Schoolman as taught by Mann in order to achieve the benefit of providing clear and sharp images on the virtual screen using small display device.

In reference to claim 5 Yasukawa discloses the projection unit is capable of wired communication with the information source (image display information sent from the computer 3 via the connection cord 106 is decoded by the drive circuit 105 and displayed on the liquid crystal panel 102; col. 11, lines 16-18).

In reference to claim 8, Yasukawa discloses the projection unit is adapted to display data, received from the information source on a virtual screen (virtual screen 5 in Fig. 1; when looking somewhat upward, the operator 1 can view a display screen on the liquid crystal panel 102 as a virtual subscreen 5 on a virtual display screen 6 at a distance about 0.5 m to 1.0 m apart from the operator; col. 11, lines 49-51).

In reference to claim 13, Yasukawa discloses the projection unit is configured to receive power from the information source via connection cord 106 (a single cord can be used to supply power to the image display device as well as to transmit image display information to the same device; col. 8, lines 26-29).

In reference to claim 18, Yasukawa discloses a method of forming a wearable device (2) in Fig. 1 that displays data from an information source (computer 3), the method comprising:

providing a pair of spectacles (display device 2 has a spectacles like frame 101) adapted to be worn on the face of a person (operator 1); and

coupling a projection (display panel 102 and enlarging lens 120 of display 2) unit to the pair of spectacles, the projection unit adapted to display data received from an information source (computer 3 providing display data to the display 2; col. 10, lines 67-col.11, line 2).

Yasukawa also discloses the projection unit is structural and functionally application independent (col. 14, lines 64-66; col. 15, lines 62-65; col.23, lines 39-64; Figures. 1,8, 12; 15 31, 32, 35, 38, 39, 42 show the unit is structural and functionally application independent).

Yasukawa does not disclose the pair of spectacles having a first and a second lens which are independent of the projection unit.

Schoolman discloses a projection unit (Fig. 7-9) for a portable computer having first and second lenses 65 and 66 which are independent from the projection unit as claimed.

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide the lenses 65 and 66 in the system of Yasukawa as taught by Schoolman to provide users plain lenses or vision corrected lenses as desired (col. 6, lines 45-50).

The combination of Yasukawa and Schoolman does not disclose the information source is a television set, and wherein the projection unit is adapted to display data from the television set.

Mann discloses a pair of spectacles (eye-glasses 100) having a projection unit (105) adapted to display data from a television set 160 (television 160 in Fig. 1 contains television tuner; col. 12, lines 55-60).

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide the television set as the display of the combination of Yasukawa and Schoolman as taught by Mann because it would provide users a combined display system not only capable of displaying data from computer for working but also providing video program from the television for entertaining.

In reference to claim 19, Yasukawa discloses the projection unit is capable of wired communication with the information source (the computer 3 is disposed under the desk 7 to transmit image display information to the display device 2 via a connection cord 106; col. 10, lines 63- col. 11, lines 1-3).

In reference to claims 6 and 20, Yasukawa, in an alternate embodiment discloses the projection unit is capable of wireless communication with the information source (Fig. 46 shows the image information source 81 wireless connected with head up display 2 via antenna 201 and 202; col. 25, lines 17-23).

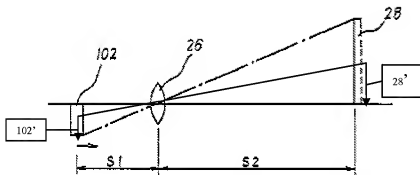
It would have been obvious for one of ordinary skill in the art at the time of the invention to provide the wireless communication for the projection unit (2) for allowing the image source

(3) to be handheld easily in its use and significantly simplifying the removal and mounting of the display device in the image source (col. 8, line 67 through col. 9 line 3).

In reference to claim 9, Yasukawa discloses a size of the virtual screen is a function of a focal length of line of the projection unit (Fig. 26-27; col. 19, lines 30-40).

In reference to claim 10, as shown in modified of Fig. 26, given the distance S1 and S2 held constant, the size of the virtual screen 28' is proportional (i.e. is a function) to the size of the display 102' as provided below.

FIG. 26



It would have been obvious for one of ordinary skill in the art to recognize (in the modified Fig. 26) that the size of virtual screen (28') is a function of a size of an image-forming panel (102') of the projection unit and the larger size of the display 102 provides larger virtual screen virtual screen 28.

In reference to claim 12, Yasukawa discloses in an alternate embodiment, the projection unit (2) is battery powered (col. 25, lines 21-23).

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide the battery for the projection unit so that the projection unit has its own power source for operating when the projection unit used in wireless communication with the information source.

In reference to claim 15, Yasukawa discloses wherein the projection unit (2) is adapted to receive data from a transmitter (transmission circuit 99) that is integral with the information source 99 (Fig. 46-47 show the transmission circuit 99 in integral with the information source 81).

In reference to claim 16, Yasukawa does not disclose the projection unit is adapted to receive data from a transmitter that is separate from the information source.

However, absent a showing of critically and/or unexpected result, it would be obvious to one of ordinary skill in the art to separate the transmitter from the information source as desired as was judicially recognized with *Nerwin v. Erlichman*, 168 USPQ 177, 179 (PTO Bd. of Int. 1969), which recognizes that make separable of well known element is normally not desired toward patentable subject matter.

3. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yasukawa in view of Schoolman (U.S. Patent No. 5,281,957), in view of Mann (U.S. Patent No. 6,307,526) and further in view of Preston (U.S. Patent No. 6,094,283).

In reference to claim 7, the combination of Yasukawa and Schoolman, Mann does not disclose the aspect ratio of the data displayed by the projection unit is 4:3. Preston discloses a

head mounted display unit having a projection unit (26,28) capable of displaying data with an aspect ratio of 4:3.

It would have been obvious for one of ordinary skill in the art at the time of the invention to recognize the typical computer monitor has an aspect ratio 4:3 as well known and widely used to display image for computer applications on projection unit in head up display technology as disclosed by Preston (col. 1, lines 30-38)

4. Claims 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yasukawa and Schoolman (U.S Patent No. 5,281,957), in view of Mann (U.S Patent No. 6,307,526) further in view of Hori et al. (5,072,209), hereinafter Hori.

In reference to claim 14, the combination of Yasukawa and Schoolman does not disclose the projection unit is a solar powered. Hori discloses a projection unit of a head up display powered by a solar cell. (Fig. 4, lines 2-5).

It would have been obvious for one of ordinary skill in the art at the time of the invention to utilize the solar powered system in the projection unit of Yasukawa as taught by Hori in order to achieve the benefit of saving time and labor to charge the battery separately (col. 4, lines 20-25).

5. Claims 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yasukawa in view of Schoolman (U.S Patent No. 5,281,957), in view of Mann (U.S Patent No. 6,307,526) and further in view of Kato et al. (U.S Patent No. 5,497,170), hereinafter Kato

In reference to claim 17, the combination Yasukawa and Schoolman and Mann does not disclose a heat deflector for the spectacles unit. Kato discloses a heat deflector 20 for a head-up display having a projection unit 19 with a heat-dissipating member 20 to dissipate heat for the display (Fig. 17; col. 9, lines 65-67 and col. 10, lines 1-4).

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide the dissipating member 20 to dissipate the heat of the display combination of Yasukawa and Schoolman as taught by Kato in order to achieve the benefit of preventing thermal deformation or break other members of the projection unit which could occur if they were subjected to the infrared rays (col. 10, lines 5-10 of Kato).

6. Claim 4 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yasukawa in view of Schoolman and Mann and further in view of Barkan et al. (U.S Patent No. 5,656,804)

In reference to claim 4, the Yasukawa discloses the display (2, Fig. 2 and Fig 5) further comprising a motion sensor 107 (sensor 107 detect the movement of the use head; col. 12, lines 23-26) and a controller (105; Fig. 5), the controller is adapted to receive an input from the motion sensor (107) and responsive to enable a receiver of the projection unit (display panel 102 receive information source from computer and the CPU 132 checks whether or not the output of the sensor 107 has changed, and if it changes when the operator moves his or her head, computes an address required to display a screen within the display frame 51 according to the change in angle to output it to the image memory 104. The display panel 102 displays the image data. In this manner, the operator can view a large number of virtual subscreen 5 by moving his head, i.e.

the controller 105 receives input from motion sensor 107 that detects the movement of operator's head to enable the display 102 to display plurality of virtual subscreens 5 as shown in Fig. 3; col. 12, lines 10-32). The combination of Yasukawa, Schoolman and Mann does not disclose the motion sensor for disabling or enabling a receiver, i.e. the display of the projection unit.

Barkan discloses a motion sensor for activating and inactivating a display of a portable terminal (see abstract, Fig. 5, col. 5, lines 15-30, col. 8, lines 1-25; col. 11, lines 50-63).

It would have been obvious for one of ordinary skill in the art at the time of the invention to learn the teaching of using the motion sensor to activating or inactivating the display device in the combination of Yasukawa, Schoolman and Mann in view Barkan since the operation to turn on/off the display device of the projection unit could be used automatically to achieve the predictable result of saving power for the display system.

In reference to claims 21 and 22, Barkan discloses the system is turn on/off when the motion sensor is found to be above/below a predetermined threshold (col. 11, lines 25-65), Barkan discloses a motion sensor for activating and inactivating a display of a portable terminal (Fig. 5A, col. 5, lines 15-30, col. 8, lines 1-25; col. 11, lines 50-65) when the controller (65) to provide a shutdown control signal when the motion detected by the motion sensor is found to be above a predetermined threshold, i.e. the controller 65 having time out circuitry used to count down preselected period to turn off the device (col. 11, lines 35-50); furthermore, to provide activation for the device by detecting a small current above a threshold using detector 63, so that when the terminal not activated, any movement of the device can be sensed to turn on the terminal (see col. 11, lines 50-63)

(10) Response to Argument

Applicant's arguments with respect to claims 1 and 4-22 have been considered but not persuasive.

With respect to claims 1, 5-6, 8-13 and 18-20, Applicant argues that “none of the cited references, taken individually or in combination, teach or suggest “a pair of spectacles adapted to be worn on the face of a person, the pairs of spectacles having a first lens, and a second lens, and a projection unit” as required by claim 1. The examiner respectfully disagrees. as discussed above in the rejections of claims 1 and 18., Yasukawa discloses in Figs 1-2 a pair of data-specs (display 2 has spectacles like frame 101; see col. 11, lines 5-26), comprising: a pair of spectacles (display 2 has a spectacles like frame 101) adapted to be worn on the face of a person (operator 1); and a projection unit (display panel 102 and enlarging lens 120 of display 2) coupled to the spectacles (display 2 has a spectacles like frame 101), the projection unit adapted to display data received from an information source (3) the projection unit as shown in Figs. 20 and 21 [the computer 3 is disposed under the desk 7 to transmit information source to the display device 2; col. 10, lines 63- col. 11, lines 1-3]. Schoolman discloses a projection unit (Fig. 7-9) for a portable computer having first and second lenses 65 and 66 which are independent from the projection unit as claimed. Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to provide the lenses 65 and 66 in the system of Yasukawa as taught by Schoolman to provide users plain lenses or vision corrected lenses as desired (col. 6, lines 45-50).

Claims 7, 14 and 17 and 4 are rejected by virtue of their dependency from the rejected claim 1 and further in view of Preston, Hori et al. and Kato et al. and Barkan respectively as discussed above.

With respect to claims 21 and 22, Barkan discloses a motion sensor for activating and inactivating a display of a portable terminal (Fig. 5A, col. 5, lines 15-30, col. 8, lines 1-25; col. 11, lines 50-65) when the controller (65) to provide a shutdown control signal when the motion detected by the motion sensor is found to be above a predetermined threshold, i.e. the controller 65 having time out circuitry used to count down preselected period to turn off the device (col. 11, lines 35-50); furthermore, to provide activation for the device by detecting a small current above a threshold using detector 63, so that when the terminal not activated, any movement of the device can be sensed to turn on the terminal (see col. 11, lines 50-63), therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to learn the teaching of using the motion sensor to activating or inactivating the display device in the combination of Yasukawa, Schoolman and Mann in view Barkan since the operation to turn on/off the display device of the projection unit could be used automatically to achieve the predictable result of saving power for the system.

The rejection, therefore, is maintained.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

Art Unit: 2629

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/DUC Q DINH/

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/Michael RAZAVI/

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